

ABSTRACT

A buck regulator switching power supply (10) selectively enabling a low
5 side device to effectively recharge a bootstrap capacitor (C_{boot}) during a high duty
cycle of operation. The switching power supply (10) includes a gate driver (12)
driving a gate of a high side FET (Q1) responsive to a controller circuit (14).
Controller circuit (14) includes a controller (16) responsively controlled by a
comparator (18). Comparator (18) senses the charge of the charging side of the
10 bootstrap capacitor (C_{boot}) as compared to a voltage (V_{ref}). The comparator (18)
also responsively generates an output signal on an output line (20) as a function of
the voltage at the phased output